The Great Basin Restoration Initiative

The Eastern Nevada Landscape Restoration Project

A Project for Implementing The Great Basin Restoration Initiative

Ely Field Office
Bureau of Land Management
U.S. Department of the Interior

Great Basin Restoration Initiative
Eastern Nevada Landscape Restoration Project

Executive Summary

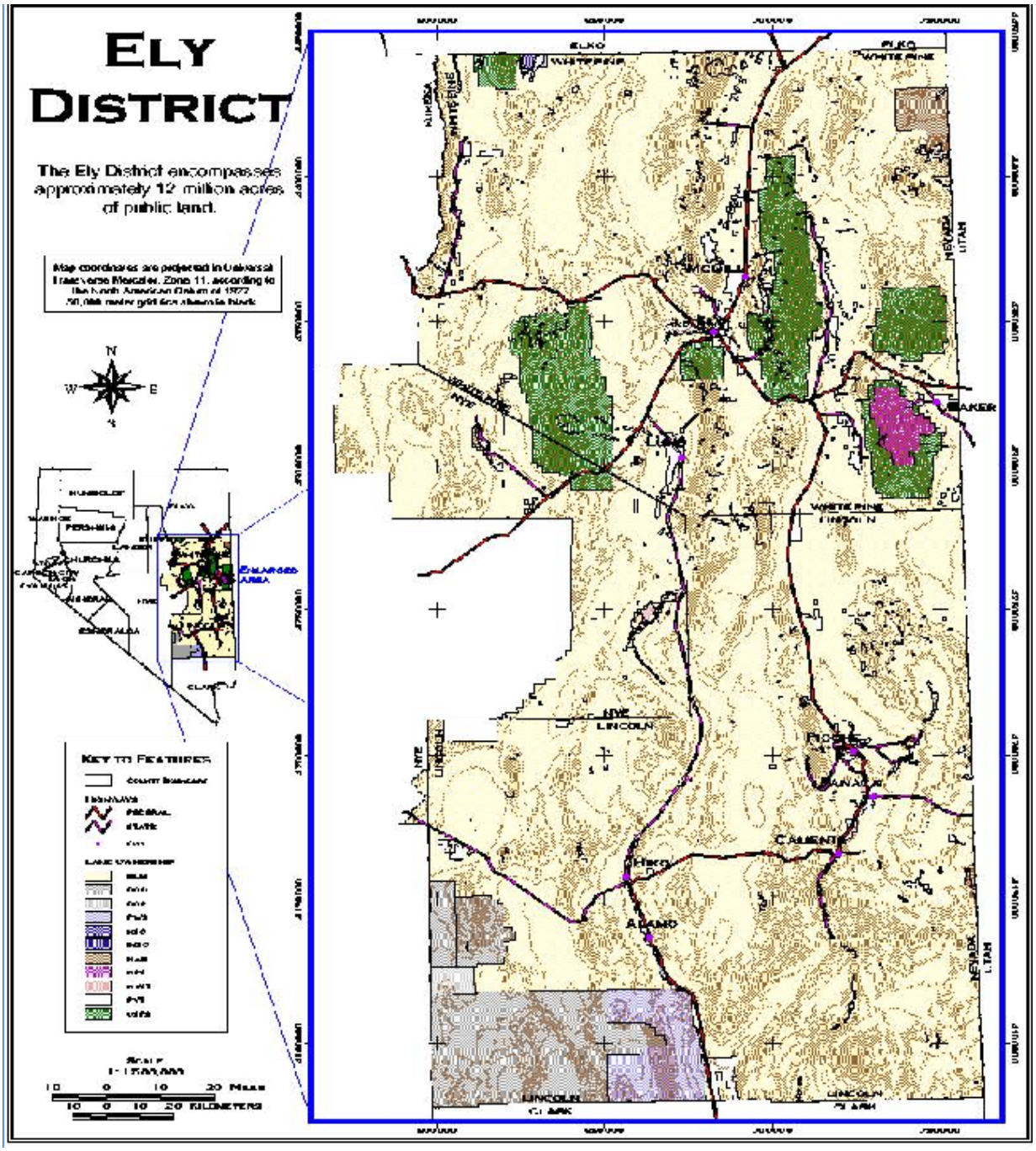
The Eastern Nevada Landscape Restoration Project (ENLP, "the Project") is a component of the multi-state Great Basin Restoration Initiative (GBRI, "the Initiative"). The purpose of this project is to develop consensus on the overall health of landscape which comprises the eastern Nevada portion of the Great Basin, and to implement actions to restore that land to a healthy, productive condition.

The project schedule for fiscal year 2001 includes:

- Establishing the Eastern Nevada Landscape Project Office in Ely.
- Implementing an urban interface fuels reduction program on Ward Mountain in White Pine County and Mount Wilson in Lincoln County, encompassing 24,000 acres, phased in over a three-year period.
- Formation of landscape teams in three landscapes.
- Continuing the prescribed fire program.
- Managing natural fire.
- Conducting a summer tour and workshop, scheduled for June 22-24, 2001.
- Establishing a summer intern program in cooperation with Utah State University and the University of Nevada Reno, in which the Ely Field Office will host 13 interns.
- Implementation of a weed control program to include treating 30,000 acres of cheatgrass and halogeton and 20,000 acres of noxious weeds.

The Eastern Nevada Landscape Coalition is a non-profit organization, created by representatives of a variety of interests. The coalition will seek grants, contributed funds and budget allocations to support the project.

The goal of the Project is to restore healthy ecosystems in eastern Nevada, as part of the broader Great Basin Restoration Initiative. In working with the ecosystem, improvement and/or protection will be made to habitat, watershed stability, riparian areas, species diversity and composition, and Native American religious and cultural values.


ELY DISTRICT
The Ely District encompasses approximately 12 million acres of public land.
Map coordinates are projected in Universal Transverse Mercator, Zone 11, according to the North American Datum of 1927
N
W
E
S
Enlarged Area
KEY TO FEATURES
ELKO
WHITE PINE
LINCOLN
NYE
CLARK
BAKER
CALIENTE
ADAMO
NEVADA
UTAH
Scale
1:1,500,000
10 0 10 20 Miles
10 0 10 20 KILOMETERS

Great Basin Restoration Initiative

Creating Healthy Public Lands Through Long-term Management

The Great Basin Restoration Initiative (GBRI, "the Initiative") is an umbrella program to restore healthy vegetative communities on public lands in the Intermountain Area. Included in this initiative are:

- Achieving appropriate numbers of wild horses and burros on the range.
- Treating areas where pinyon/juniper (P/J) woodlands are restricting growth of other vegetation.
- Restoring riparian areas, and stopping the spread of exotic annuals such as cheatgrass and noxious weeds.

Restoration is a long-term, landscape-based approach to changing the ecological health of the rangelands. The difference between restoration and rehabilitation is that the latter is a short-term fix aimed at stabilizing the soil after a fire. The long-term goal of restoration is to return the land to a more natural state.

The Initiative includes most of Nevada, the western half of Utah, the lower third of Idaho, the southeast corner of Oregon, and a narrow strip of northeastern California.

The vegetation situation in the Great Basin did not occur suddenly. It has been building for more than a century.

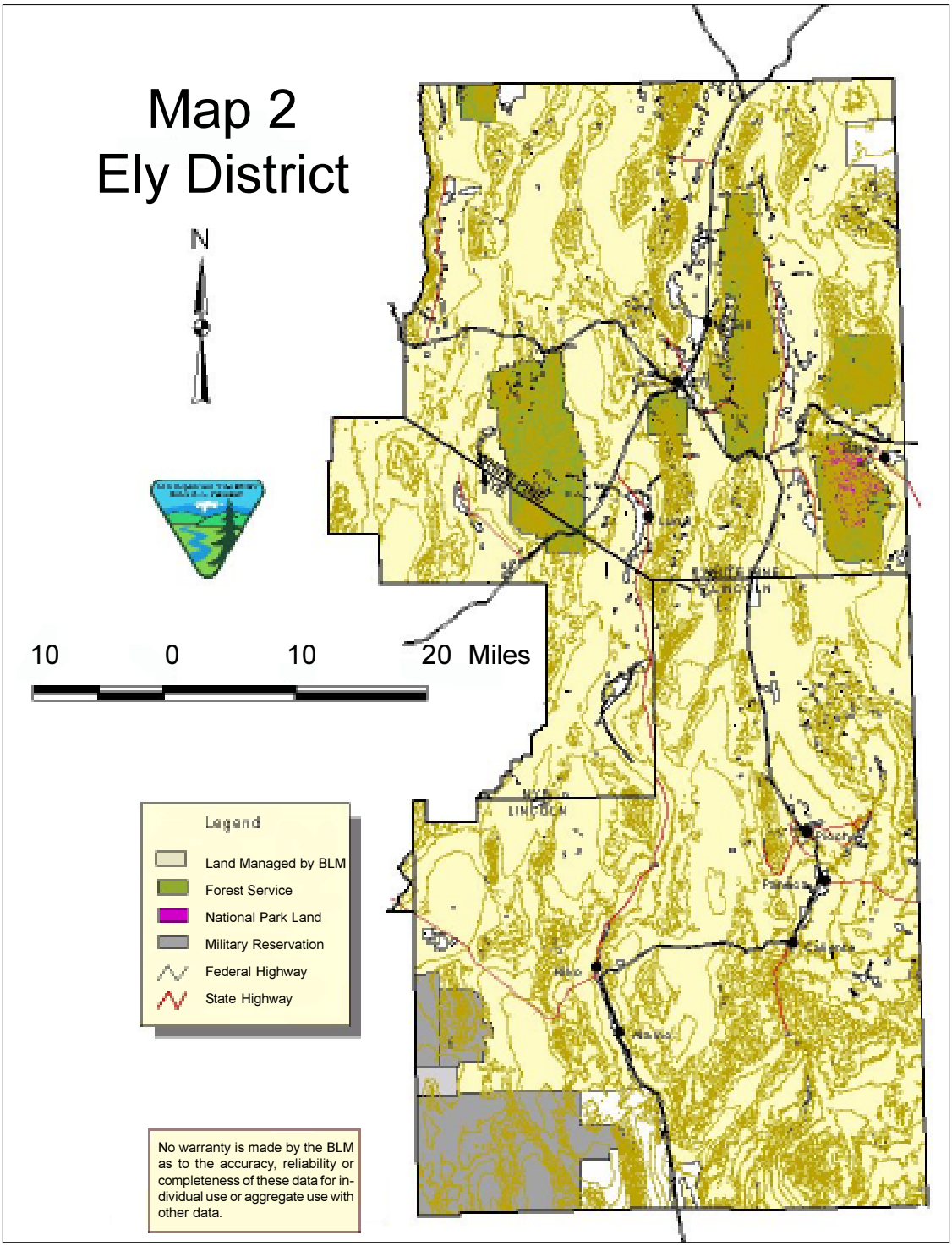
During the latter half of that time, there has been a widespread encroachment of cheatgrass, not only in the Great Basin but throughout the United States. At this time, 25 million acres have been invaded by cheatgrass.

During most years, Nevada is the state with the fourth highest number of acres burned by wildland fire. The fire cycle began with events that occurred a number of decades ago. Hay and seed were brought in that contained cheatgrass seed. That aggressive seed, sprouting rapidly after fire, has come to dominate many landscapes in the Great Basin. It has changed the ecosystem in negative ways.

Loss of habitat has also resulted in a diminishing of several species of wildlife; watersheds are less stable; there is less forage for livestock grazing; and the opportunity has been created for noxious weeds to come in and prosper. Native perennial grasses, sage grouse and sage grouse habitat are being lost.

The initiation of GBRI represents a recognition of the diminished quality of the intermountain area, and a beginning of work to reverse that trend. Goals that are consistent with BLM's standards for rangeland health are being set for all the land which is at risk.

Map 2
Ely District



Eastern Nevada Restoration Project

Bringing About Change Provides Opportunity For BLM to Work in Harmony With Partners

The ENLRP is a strategy for implementing GBRI in eastern Nevada. Over a long period of time, a variety of circumstances have allowed invasion by aggressive exotic species, especially cheatgrass, and of communities of noxious weeds.

The situation was brought to a danger point by extensive fires during the 1999 and 2000 summer seasons. It became clear the Great Basin was in a fire cycle, in which exotic species, sprouting quickly in the wake of wildland fire, cured and became fire hazards within one or two years. In November of 1999, the Bureau of Land Management (BLM) addressed these restoration needs in a report entitled *Out of Ashes, An Opportunity*.

BLM's objective is to restore the land to a natural state, where fire is a benign and essential element of the system, and not a destructive force.

Healthy natural wildland is productive, supporting the widest variety of wildlife, livestock, watershed stability, wild horse herds and more.

Opportunity identifies the need for long-term restoration within the Great Basin ecosystem. In April, 2000 the BLM released a second report, *The Great Basin: Healing the Land*. The latter report reviews the background and challenges of restoration, and identifies guiding principles and strategies for implementation of change.

ENLRP is designed to develop a consensus on the overall health of the Great Basin in eastern Nevada, and to implement actions to restore the land. Through partnerships, the project seeks to restore and maintain the biological and ecological conditions of the eastern Nevada landscape through collaborative efforts.

Restoring the Great Basin landscape in eastern Nevada offers BLM an opportunity to work with the many willing partners who have an interest in the Great Basin ecosystem, and with local communities.

The goals of ENLRP are consistent with those identified in *Healing the Land*. They are:

- Maintain functioning native plant communities where they currently exist.
- Improve plant community composition, structure and condition in priority areas that are currently ecologically degraded.
- Retain soil productivity.
- Maintain/improve water quality and riparian areas
- Protect and improve habitat.

The vegetative communities of the Great Basin have changed significantly over time. In recent years the land management approaches, including aggressive fire suppression, in combination with long-term climatic shifts and the inadvertent introduction and spread of noxious weeds and exotic species have changed the ecosystem. These changes have led to a number of negative conditions:

- Steadily increasing fuel loads, increased fire intensity and spread.
- Subsequent loss of soil productivity
- Loss of species diversity.
- Deterioration of watersheds (soil erosion and reduced water quality and quantity).
- Invasion of exotic species and noxious weeds.

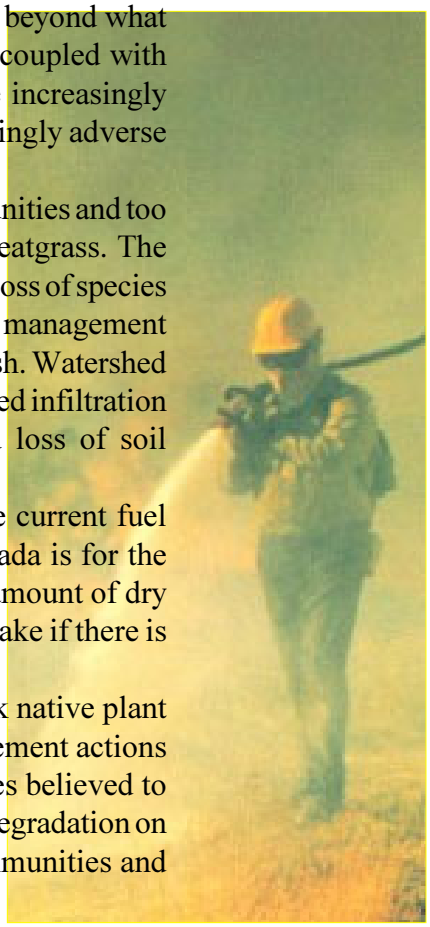
In bringing about wildland change, there may be some temporary economic benefits. For example, reduction of pinyon-juniper stands will yield biomass product which might have commercial value. Some coalition partners are interested in exploring this possibility. This use may help defray cost, and bring economic activity to a locally despressed economy.

The wildland-urban interface across the Great Basin has become a critical area for firefighters. Retardant is dropped to protect a home as flames approach, moving through a cheatgrass-dominated rangeland.

About Catastrophic Fire

Unnatural catastrophic fire is the primary threat to many native plant communities in the eastern Nevada landscape. Although it is commonly accepted that many Great Basin plant communities have evolved with some level of periodic fire, the catastrophic fire occurring today is unprecedented under the present climatic regime. The frequency at which accumulated fuels, weather conditions and ignition events merge in time plays a large role in influencing fire behavior and in turn the structure and function of plant communities.

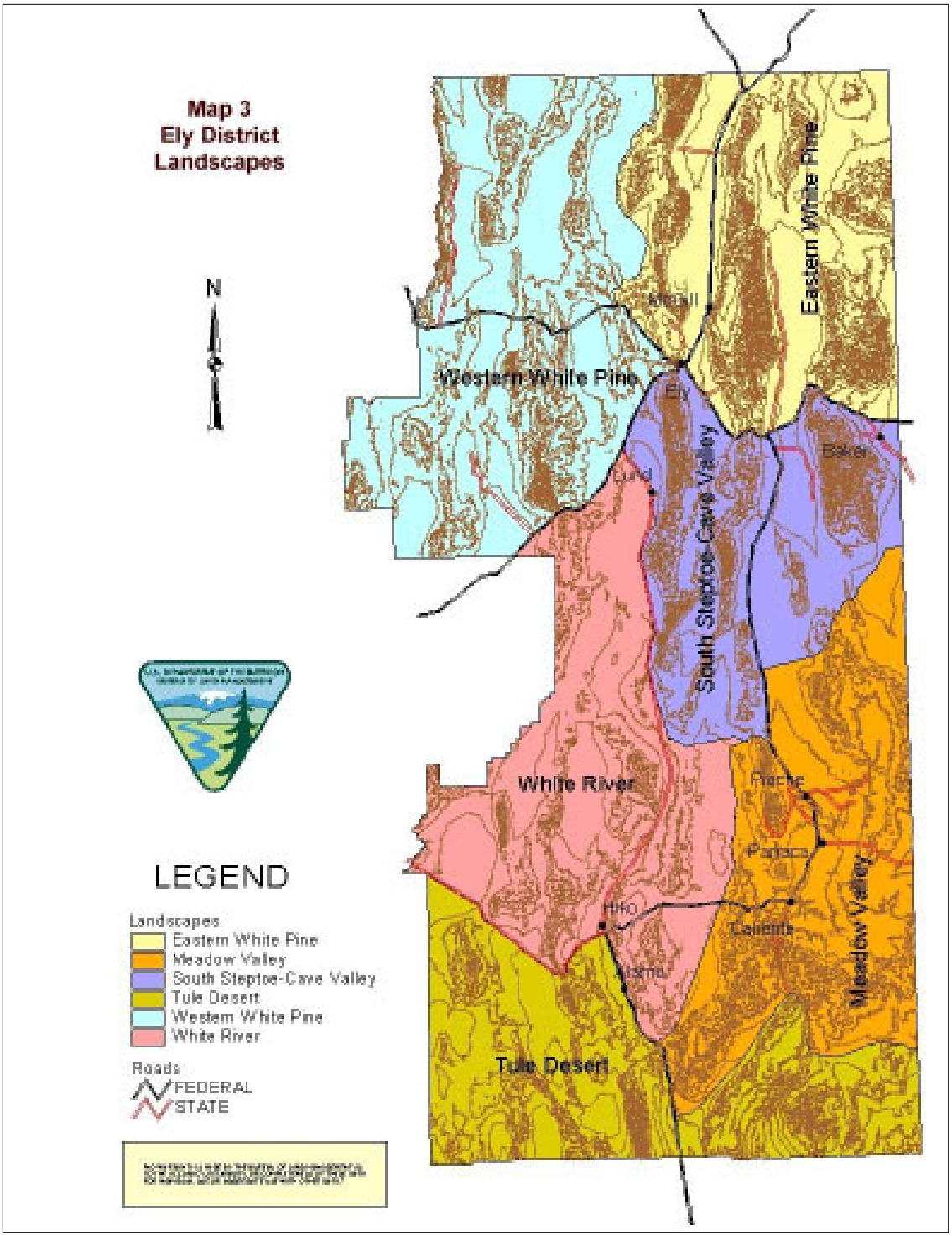
In eastern Nevada, as in many areas of the American West, aggressive fire suppression and grazing have restricted fire to small portions of the landscape. This has allowed fuel to accumulate on the rest of the landscape, to levels beyond what might have occurred naturally. The continued accumulation of fuel coupled with active fire suppression has led to larger, more intense fires that are increasingly difficult to suppress. Consequently, wildland fires are having increasingly adverse effects on plant communities and watersheds.



Catastrophic fire in the Great Basin removes the native plant communities and too often has facilitated the invasion of exotic species, most notably cheatgrass. The establishment of cheatgrass dominated plant communities result in the loss of species diversity and altered ecosystem function, which without costly management intervention, make it exceedingly difficult for native plants to reestablish. Watershed function is impaired because the loss of ground cover results in decreased infiltration and increased runoff which contribute to accelerated erosion and loss of soil nutrients.

To use the terminology of land managers and fire fighters, at the current fuel loadings the present trajectory of plant communities in eastern Nevada is for the frequency of catastrophic fire to escalate. Fuel loading refers to the amount of dry fuel in a given area. Trajectory refers to the direction conditions will take if there is no other action.

The centerpiece of the Eastern Nevada Project is to identify at-risk native plant communities and intervene with the ecologically appropriate management actions before catastrophic fire can occur. Reestablishing natural fire regimes believed to have evolved with the landscape, we can place much of the landscape degradation on a trajectory of recovery, preserving the integrity of native plant communities and maintaining and enhancing watershed function.


Map 3
Ely District
Landscapes
N
Eastern White Pine
Western White Pine
Ely
Baker
South Steptoe-Cave Valley
White River
Pioche
Panaca
Caliente
Meadow Valley
Tule Desert
LEGEND
Landscapes
Eastern White Pine
Meadow Valley
South Steptoe-Cave Valley
Tule Desert
Western White Pine
White River
Roads
FEDERAL
STATE

The Land

The Ely District of the BLM in Nevada encompasses approximately 12 million acres in Eastern Nevada, an area roughly the size of the combined states of New Jersey and Maryland. Through an interdisciplinary team effort, BLM has divided the district into six landscapes.

The project area encompasses approximately 10 million acres, within which are a variety of vegetative groups:

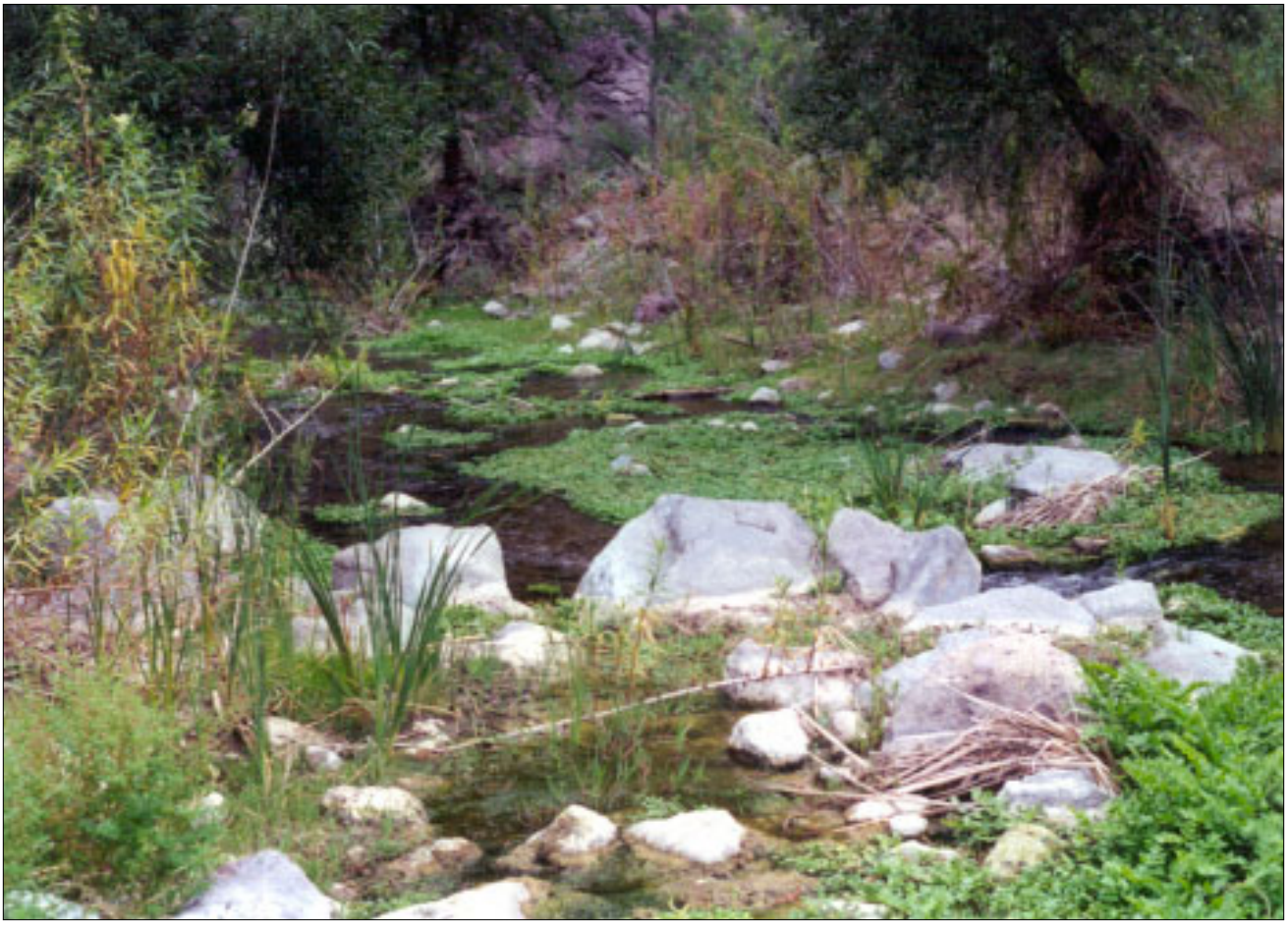
- 4 million acres of pinyon-juniper woodlands.
- 2 million acres of pinyon-juniper-sagebrush mix.
- 2.5 million acres of vegetative communities dominated by sagebrush
- 1.5 million acres of valley floor and mixed conifer forests.

Within these there are 188 miles of streams, with associated riparian habitat, and 7,800 acres of riparian habitat associated with meadows, seeps, springs and wetlands.

Tens of thousands of these acres have become infested with noxious weeds and invasive species of exotic plants. This acreage places additional millions of adjacent acres at risk from fast-moving wildland fire, and the subsequent invasion of exotic plant communities.

Noxious weeds and exotic species which have been identified in the region include whitetop, tamarisk, dalmation toadflax, knapweeds, halogeton, Russian thistle and cheatgrass.

Once an area dominated by white sage, this valley floor has been taken over by halogeton, an aggressive, noxious weed that is poisonous to some animals.



Water moving slowly, shaded from hot summer sunshine, creates a peaceful riparian area. Meadow Creek provides water year-around from healthy uplands, providing habitat for fish, water for wildlife and for livestock and wild horses.

An area where tall whitetop, a noxious weed, has become established. The aggressive nature of tall whitetop will allow it to spread rapidly, unless treated quickly.

The Principles

The guiding principles for the project were developed through extensive public input.

- Develop strategies and implement actions to restore the landscape to an ecologically functioning condition.
- Initiate a comprehensive landscape/watershed restoration initiative using the adaptive management model and best available science.
- Involve local communities and tribes in decisions about restoration activities.
- Address all vegetative communities within the landscape with respect to age, structure, species diversity, and composition.
- Establish desired percentages in successional stages of woodlands.
- Use fire as a restoration treatment, either alone or following a thinning.
- Provide biomass only as a by-product of meeting primary restoration objectives.
- Avoid construction of new roads.
- Have negligible adverse effects on soils.
- Control noxious weeds and invasive plants within the landscape.
- Develop local watershed assessments based on ecological site potential.

The GBRI is a broad approach to restore ecological stability to the Great Basin. It will involve many local efforts, such as the eastern Nevada project. The project will ensure that the best available science is applied through an adaptive management process. Adjustments and change will be made is the need is identified by multi-disciplinary teams, in concert with project partners.

Coalition Members

Working partners continue to be added to the coalition. Those active in the coalition include at this time include:

- Rocky Mountain Elk Foundation
- Mule Deer Foundation
- The Nature Conservancy
- Nevada Cattlemen's Association
- Nevada Woolgrowers Association
- The Society for Range Management
- The Red Rock Audubon Society
- White Pine, Nye and Lincoln Counties

Antelope Valley from the pinyon-juniper stand on an upland area. The health of landscape areas such as this will be improved through the coalition's efforts.

Partnerships involve collaborative work by a diverse group of people. Going on-site, to discuss conditions and how change can be brought about promotes understanding and 'buy-in' by coalition members

The Coalition

The most lasting, significant change can be accomplished when a wide variety of interests come together to effect a difference. *The Great Basin: Healing the Land*, suggests the most effective way the BLM can address landscape projects is to "develop partnerships to enhance landscape-scale management efforts."

The Eastern Nevada Landscape Coalition (ENLC, "the Coalition") is a community-based partnership of about 75 non-governmental partners. These include representatives and groups from agricultural, conservation, cultural, and environmental communities, universities, and private enterprise. These partners have establilshed a coalition to help identify and implement restoration work on public land in eastern Nevada.

The coalition's function is to forge partnerships, conduct fund raising, establish broad-based goals and objectives, determine best science processes, offer advice, and provide or develop information based on best-science practices.

The coalition has opened a project office in eastern Nevada. The coalition is an independent non-profit organization not affiliated with the BLM.

BLM will work with the coalition through one or more cooperative agreements. Through the project office, the coalition will be developing and maintaining partnerships, contracting, coordinating projects and landscape teams and communicating progress with the public. The coalition will develop funding sources from private individuals, foundations, and other sources as identified.

Academic Involvement

One of the principal partners, the University of Nevada, Reno, serves as the host institution for the Great Basin Cooperative Ecosystem Studies Unit (BG-CESU, "the Studies Unit"). The studies unit involves numerous institutions of higher education in the West. This unit will provide a coordinated network of more than 500 natural resource, biological, environmental and social scientists providing research and technical assistance, as well as education and new technologies for ecosystem management in the Great Basin.

It holds the potential for collaborative, creative ecosystem problem-solving through the diversity of individuals, institutions and organizations involved in the studies unit.

These partners and cooperators bring to the coalition a wide range of resources, including scientific and technical expertise, access to research libraries, museums, laboratories and field experiment stations. The University of Nevada, Reno, College of Agriculture, Biotechnology and Natural Resources has been active inr esearch in the Great Basin for many years.

Academic partners of the BG-CESU include:

- Utah State University (Senior Partner)
  - University of Nevada, Reno
  - The Desert Research Institute
  - The University of Utah
  - Oregon State University
  - D-Q University
  - Great Basin College
  - Idaho State University
  - University of Nevada, Las Vegas

Federal participants:

- Bureau of Land Management
- Bureau of Reclamation
- Geological Survey
- Forest Service
- National Park Service
- Department of Energy
- Department of Defense

Organizational participants:

- The Rocky Mountain Elk Foundation
- The Nature Conservancy
- Pyramid Lake Paiute Tribe
- Walker Lake Paiute Tribe
- Fallon Paiute-Shoshone Tribe
- Nevada Department of Conservation and Natural Resources
- Community College of Southern Nevada
- University of California, Berkeley, Museum of Vertebrate Zoology
- The Center for Conservation Biology, Stanford University
- The University of California White Mountain research Station

The Landscape Teams

Three landscape teams are to be formed to implement on-the-ground projects. These teams will be comprised of agency staff and scientists, university faculty and researchers, other partners, and interested members of the public.

The teams will be capable of identifying landscape goals, conduct assessments of landscape areas and watersheds, support NEPA documentation and compliance and plan amendments. They will be empowered to develop site-specific objectives designed to meet established goals, and to develop and recommend actions designed to meet objectives. The teams will monitor and evaluate the decisions as they are implemented. Rehabilitation considerations made by the teams are to be based on establishing the desired plant communities.

Estimated funding necessary for development and support of three landscape teams is outlined in the table, below.

Project implementation will include habitat treatments, monitoring and evaluation of the treatments, and opportunities for research and education. Throughout the process, involvement and input will be actively solicited from the academic community, researchers, stakeholders, Native Americans and the general public.

Elk thrive in the areas where pinyon-juniper woodlands and sagebrush steppe meet. The elk herds support hunting, an economic benefit to the region.

The above photo shows the result of a high intensity, short duration thunderstorm event occurring after a wildland fire. Excessive erosion washed away soil that would have supported new growth and protected against invasive and noxious weeds.

Another example of post-wildland fire erosion shows a deep cut made by runoff from rains. Left unassisted, the land would take generations to recover from a single fire.

Healthy grasslands, bordered on the upland by strong stands of pinyon-juniper woodlands, provide eye-appealing lands where a wide variety of wildlife can find a home, livestock and wild horses can graze, and visitors can enjoy an open landscape.

Indian Paintbrush, a native wildflower, brings color to the open lands of eastern Nevada